



## SEQUENCE LISTING

<110> Shaw , Jei-Fu  
Lai, Chia-Ping

<120> PLANT TUBBY-LIKE PROTEINS

<130> 08919-099001

<140> US 10/763,042

<141> 2004-01-21

<150> US 60/441,380

<151> 2004-01-21

<160> 48

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 450

<212> PRT

<213> Arabidopsis sp.

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			20					25					30		
Gly	Gly	Lys	Ser	Arg	Gly	Ser	Val	Gln	Asp	Ser	His	Glu	Glu	Gln	Leu
		35					40					45			
Val	Val	Thr	Ile	Gln	Glu	Thr	Pro	Trp	Ala	Asn	Leu	Pro	Pro	Glu	Leu
	50					55					60				
Leu	Arg	Asp	Val	Ile	Lys	Arg	Leu	Glu	Glu	Ser	Glu	Ser	Val	Trp	Pro
65					70					75					80
Ala	Arg	Arg	His	Val	Val	Ala	Cys	Ala	Ser	Val	Cys	Arg	Ser	Trp	Arg
			85						90					95	
Asp	Met	Cys	Lys	Glu	Ile	Val	Gln	Ser	Pro	Glu	Leu	Ser	Gly	Lys	Ile
			100					105					110		
Thr	Phe	Pro	Val	Ser	Leu	Lys	Gln	Pro	Gly	Pro	Arg	Asp	Ala	Thr	Met
		115					120					125			
Gln	Cys	Phe	Ile	Lys	Arg	Asp	Lys	Ser	Asn	Leu	Thr	Tyr	His	Leu	Tyr
	130					135					140				
Leu	Cys	Leu	Ser	Pro	Ala	Leu	Leu	Val	Glu	Asn	Gly	Lys	Phe	Leu	Leu
145					150					155					160
Ser	Ala	Lys	Arg	Ile	Arg	Arg	Thr	Thr	Tyr	Thr	Glu	Tyr	Val	Ile	Ser
			165						170					175	
Met	His	Ala	Asp	Thr	Ile	Ser	Arg	Ser	Ser	Asn	Thr	Tyr	Ile	Gly	Lys
			180					185					190		
Ile	Arg	Ser	Asn	Phe	Leu	Gly	Thr	Lys	Phe	Ile	Ile	Tyr	Asp	Thr	Gln
		195					200					205			
Pro	Ala	Tyr	Asn	Ser	Asn	Ile	Ala	Arg	Ala	Val	Gln	Pro	Val	Gly	Leu
	210					215					220				
Ser	Arg	Arg	Phe	Tyr	Ser	Lys	Arg	Val	Ser	Pro	Lys	Val	Pro	Ser	Gly

225                      230                      235                      240  
 Ser Tyr Lys Ile Ala Gln Val Ser Tyr Glu Leu Asn Val Leu Gly Thr  
                                  245                      250                      255  
 Arg Gly Pro Arg Arg Met His Cys Ala Met Asn Ser Ile Pro Ala Ser  
                                  260                      265                      270  
 Ser Leu Ala Glu Gly Gly Thr Val Pro Gly Gln Pro Asp Ile Ile Val  
                                  275                      280                      285  
 Pro Arg Ser Ile Leu Asp Glu Ser Phe Arg Ser Ile Thr Ser Ser Ser  
                                  290                      295                      300  
 Ser Arg Lys Ile Thr Tyr Asp Tyr Ser Asn Asp Phe Ser Ser Ala Arg  
 305                      310                      315                      320  
 Phe Ser Asp Ile Leu Gly Pro Leu Ser Glu Asp Gln Glu Val Val Leu  
                                  325                      330                      335  
 Glu Glu Gly Lys Glu Arg Asn Ser Pro Pro Leu Val Leu Lys Asn Lys  
                                  340                      345                      350  
 Pro Pro Arg Trp His Glu Gln Leu Gln Cys Trp Cys Leu Asn Phe Arg  
                                  355                      360                      365  
 Gly Arg Val Thr Val Ala Ser Val Lys Asn Phe Gln Leu Ile Ala Ala  
                                  370                      375                      380  
 Asn Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Leu  
 385                      390                      395                      400  
 Thr Gln Pro Gln Pro Ser Gly Gln Thr Asp Gly Pro Asp Lys Ile Ile  
                                  405                      410                      415  
 Leu Gln Phe Gly Lys Val Gly Lys Asp Met Phe Thr Met Asp Phe Arg  
                                  420                      425                      430  
 Tyr Pro Leu Ser Ala Phe Gln Ala Phe Ala Ile Cys Leu Ser Ser Phe  
                                  435                      440                      445  
 Asp Thr  
 450

<210> 2

<211> 394

<212> PRT

<213> Arabidopsis sp.

<400> 2

Met Ser Leu Lys Ser Ile Leu Arg Asp Leu Lys Glu Val Arg Asp Gly  
 1                      5                      10                      15  
 Leu Gly Gly Ile Ser Lys Arg Ser Trp Ser Lys Ser Ser His Ile Ala  
                                  20                      25                      30  
 Pro Asp Gln Thr Thr Pro Pro Leu Asp Asn Ile Pro Gln Ser Pro Trp  
                                  35                      40                      45  
 Ala Ser Leu Pro Pro Glu Leu Leu His Asp Ile Ile Trp Arg Val Glu  
                                  50                      55                      60  
 Glu Ser Glu Thr Ala Trp Pro Ala Arg Ala Ala Val Val Ser Cys Ala  
 65                      70                      75                      80  
 Ser Val Cys Lys Ser Trp Arg Gly Ile Thr Met Glu Ile Val Arg Ile  
                                  85                      90                      95  
 Pro Glu Gln Cys Gly Lys Leu Thr Phe Pro Ile Ser Leu Lys Gln Pro  
                                  100                      105                      110  
 Gly Pro Arg Asp Ser Pro Ile Gln Cys Phe Ile Lys Arg Asn Arg Ala  
                                  115                      120                      125  
 Thr Ala Thr Tyr Ile Leu Tyr Tyr Gly Leu Met Pro Ser Glu Thr Glu  
                                  130                      135                      140  
 Asn Asp Lys Leu Leu Leu Ala Ala Arg Arg Ile Arg Arg Ala Thr Cys  
 145                      150                      155                      160  
 Thr Asp Phe Ile Ile Ser Leu Ser Ala Lys Asn Phe Ser Arg Ser Ser

				165					170					175			
Ser	Thr	Tyr	Val	Gly	Lys	Leu	Arg	Ser	Gly	Phe	Leu	Gly	Thr	Lys	Phe		
			180						185					190			
Thr	Ile	Tyr	Asp	Asn	Gln	Thr	Ala	Ser	Ser	Thr	Ala	Gln	Ala	Gln	Pro		
		195					200					205					
Asn	Arg	Arg	Leu	His	Pro	Lys	Gln	Ala	Ala	Pro	Lys	Leu	Pro	Thr	Asn		
	210					215					220						
Ser	Ser	Thr	Val	Gly	Asn	Ile	Thr	Tyr	Glu	Leu	Asn	Val	Leu	Arg	Thr		
225					230					235					240		
Arg	Gly	Pro	Arg	Arg	Met	His	Cys	Ala	Met	Asp	Ser	Ile	Pro	Leu	Ser		
			245						250					255			
Ser	Val	Ile	Ala	Glu	Pro	Ser	Val	Val	Gln	Gly	Ile	Glu	Glu	Glu	Val		
			260					265					270				
Ser	Ser	Ser	Pro	Ser	Pro	Lys	Gly	Glu	Thr	Ile	Thr	Thr	Asp	Lys	Glu		
		275				280					285						
Ile	Pro	Asp	Asn	Ser	Pro	Ser	Leu	Arg	Asp	Gln	Pro	Leu	Val	Leu	Lys		
	290					295					300						
Asn	Lys	Ser	Pro	Arg	Trp	His	Glu	Gln	Leu	Gln	Cys	Trp	Cys	Leu	Asn		
305					310					315					320		
Phe	Lys	Gly	Arg	Val	Thr	Val	Ala	Ser	Val	Lys	Asn	Phe	Gln	Leu	Val		
			325						330					335			
Ala	Glu	Ile	Asp	Ala	Ser	Leu	Asp	Ala	Pro	Pro	Glu	Glu	His	Glu	Arg		
			340					345					350				
Val	Ile	Leu	Gln	Phe	Gly	Lys	Ile	Gly	Lys	Asp	Ile	Phe	Thr	Met	Asp		
		355					360					365					
Tyr	Arg	Tyr	Pro	Leu	Ser	Ala	Phe	Gln	Ala	Phe	Ala	Ile	Cys	Ile	Ser		
	370					375					380						
Ser	Phe	Asp	Thr	Lys	Pro	Ala	Cys	Glu	Gly								
385					390												

&lt;210&gt; 3

&lt;211&gt; 406

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 3

Met	Ser	Phe	Lys	Ser	Leu	Ile	Gln	Asp	Met	Arg	Gly	Glu	Leu	Gly	Ser		
1				5				10						15			
Ile	Ser	Arg	Lys	Gly	Phe	Asp	Val	Arg	Phe	Gly	Tyr	Gly	Arg	Ser	Arg		
			20					25					30				
Ser	Gln	Arg	Val	Val	Gln	Asp	Thr	Ser	Val	Pro	Val	Asp	Ala	Phe	Lys		
		35					40					45					
Gln	Ser	Cys	Trp	Ala	Ser	Met	Pro	Pro	Glu	Leu	Leu	Arg	Asp	Val	Leu		
		50				55					60						
Met	Arg	Ile	Glu	Gln	Ser	Glu	Asp	Thr	Trp	Pro	Ser	Arg	Lys	Asn	Val		
65					70					75				80			
Val	Ser	Cys	Ala	Gly	Val	Cys	Arg	Asn	Trp	Arg	Glu	Ile	Val	Lys	Glu		
			85						90					95			
Ile	Val	Arg	Val	Pro	Glu	Leu	Ser	Ser	Lys	Leu	Thr	Phe	Pro	Ile	Ser		
			100					105					110				
Leu	Lys	Gln	Pro	Gly	Pro	Arg	Gly	Ser	Leu	Val	Gln	Cys	Tyr	Ile	Met		
		115					120					125					
Arg	Asn	Arg	Ser	Asn	Gln	Thr	Tyr	Tyr	Leu	Tyr	Leu	Gly	Leu	Asn	Gln		
	130					135					140						
Ala	Ala	Ser	Asn	Asp	Asp	Gly	Lys	Phe	Leu	Leu	Ala	Ala	Lys	Arg	Phe		
145				150						155					160		
Arg	Arg	Pro	Thr	Cys	Thr	Asp	Tyr	Ile	Ile	Ser	Leu	Asn	Cys	Asp	Asp		

				165					170					175			
Val	Ser	Arg	Gly	Ser	Asn	Thr	Tyr	Ile	Gly	Lys	Leu	Arg	Ser	Asn	Phe		
			180					185					190				
Leu	Gly	Thr	Lys	Phe	Thr	Val	Tyr	Asp	Ala	Gln	Pro	Thr	Asn	Pro	Gly		
		195					200					205					
Thr	Gln	Val	Thr	Arg	Thr	Arg	Ser	Ser	Arg	Leu	Leu	Ser	Leu	Lys	Gln		
	210					215					220						
Val	Ser	Pro	Arg	Ile	Pro	Ser	Gly	Asn	Tyr	Pro	Val	Ala	His	Ile	Ser		
225					230					235				240			
Tyr	Glu	Leu	Asn	Val	Leu	Gly	Ser	Arg	Gly	Pro	Arg	Arg	Met	Gln	Cys		
			245					250					255				
Val	Met	Asp	Ala	Ile	Pro	Ala	Ser	Ala	Val	Glu	Pro	Gly	Gly	Thr	Ala		
		260						265					270				
Pro	Thr	Gln	Thr	Glu	Leu	Val	His	Ser	Asn	Leu	Asp	Ser	Phe	Pro	Ser		
		275					280					285					
Phe	Ser	Phe	Phe	Arg	Ser	Lys	Ser	Ile	Arg	Ala	Glu	Ser	Leu	Pro	Ser		
	290					295					300						
Gly	Pro	Ser	Ser	Ala	Ala	Gln	Lys	Glu	Gly	Leu	Leu	Val	Leu	Lys	Asn		
305				310						315					320		
Lys	Ala	Pro	Arg	Trp	His	Glu	Gln	Leu	Gln	Cys	Trp	Cys	Leu	Asn	Phe		
			325					330					335				
Asn	Gly	Arg	Val	Thr	Val	Ala	Ser	Val	Lys	Asn	Phe	Gln	Leu	Val	Ala		
		340						345				350					
Ala	Pro	Glu	Asn	Gly	Pro	Ala	Gly	Pro	Glu	His	Glu	Asn	Val	Ile	Leu		
		355				360					365						
Gln	Phe	Gly	Lys	Val	Gly	Lys	Asp	Val	Phe	Thr	Met	Asp	Tyr	Gln	Tyr		
	370				375						380						
Pro	Ile	Ser	Ala	Phe	Gln	Ala	Phe	Thr	Ile	Cys	Leu	Ser	Ser	Phe	Asp		
385					390					395					400		
Thr	Lys	Ile	Ala	Cys	Glu												
				405													

&lt;210&gt; 4

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 4

Met	Pro	Pro	Glu	Leu	Leu	Arg	Asp	Val	Leu	Met	Arg	Ile	Glu	Arg	Ser		
1				5				10					15				
Glu	Asp	Thr	Trp	Pro	Ser	Arg	Lys	Asn	Val	Val	Ser	Cys	Val	Gly	Val		
		20					25					30					
Cys	Lys	Asn	Trp	Arg	Gln	Ile	Phe	Lys	Glu	Ile	Val	Asn	Val	Pro	Glu		
		35				40					45						
Val	Ser	Ser	Lys	Phe	Thr	Phe	Pro	Ile	Ser	Leu	Lys	Gln	Pro	Gly	Pro		
	50					55					60						
Gly	Gly	Ser	Leu	Val	Gln	Cys	Tyr	Val	Lys	Arg	Asn	Arg	Ser	Asn	Gln		
65					70					75				80			
Thr	Phe	Tyr	Leu	Tyr	Leu	Gly	Gly	Glu	Ala	Lys	Ile	Phe	Cys	Gln	Ser		
			85					90					95				
Glu	Pro	Ser	Asp	Ile	Tyr	Leu	Val	Pro	Tyr	Ser	Tyr	Arg	Glu	Thr	His		
		100						105				110					
Cys	Val	Met	Asp	Ala	Ile	Ser	Ala	Ser	Ala	Val	Lys	Pro	Gly	Gly	Thr		
		115				120					125						
Ala	Thr	Thr	Gln	Thr	Glu	Leu	Asp	Asn	Phe	Val	Ser	Phe	Arg	Ser	Pro		
	130					135					140						
Ser	Gly	Gln	Lys	Glu	Gly	Val	Leu	Val	Leu	Lys	Ser	Lys	Val	Pro	Arg		

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145          150          155          160
Leu Glu Glu Gln Ser Trp Cys Leu Asp Phe Asn Gly Ser Pro Glu Asn
          165          170          175
Glu Pro Glu Asn Glu Asn Asp Ile Phe Gln Phe Ala Lys Val Gly Asn
          180          185          190
Leu His Lys Leu Phe Ser Leu Tyr Glu Ala Glu Trp Ile Pro Leu Val
          195          200          205
Arg Thr Ser Val Phe Ala Val Ile Ala Arg Val Cys Arg Asp Lys Lys
          210          215          220
His Thr Pro Ser Tyr Glu Leu Lys Leu Ala Leu Tyr Phe Ala Lys Asn
225          230          235          240
Ser Ala Ile Leu Lys Lys Phe Val Leu Arg Gly Tyr Thr Arg Glu Glu
          245          250          255
Asp Leu Leu Ala Leu Pro Val Ala Asn
          260          265

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<210> 5

<211> 429

<212> PRT

<213> Arabidopsis sp.

<400> 5

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Met Ser Phe Leu Ser Ile Val Arg Asp Val Arg Asp Thr Val Gly Ser
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Phe Ser Arg Arg Ser Phe Asp Val Arg Val Ser Asn Gly Thr Thr His
          20          25          30
Gln Arg Ser Lys Ser His Gly Val Glu Ala His Ile Glu Asp Leu Ile
          35          40          45
Val Ile Lys Asn Thr Arg Trp Ala Asn Leu Pro Ala Ala Leu Leu Arg
          50          55          60
Asp Val Met Lys Lys Leu Asp Glu Ser Glu Ser Thr Trp Pro Ala Arg
65          70          75          80
Lys Gln Val Val Ala Cys Ala Gly Val Cys Lys Thr Trp Arg Leu Met
          85          90          95
Cys Lys Asp Ile Val Lys Ser Pro Glu Phe Ser Gly Lys Leu Thr Phe
          100          105          110
Pro Val Ser Leu Lys Gln Pro Gly Pro Arg Asp Gly Ile Ile Gln Cys
          115          120          125
Tyr Ile Lys Arg Asp Lys Ser Asn Met Thr Tyr His Leu Tyr Leu Ser
          130          135          140
Leu Ser Pro Ala Ile Leu Val Glu Ser Gly Lys Phe Leu Leu Ser Ala
145          150          155          160
Lys Arg Ser Arg Arg Ala Thr Tyr Thr Glu Tyr Val Ile Ser Met Asp
          165          170          175
Ala Asp Asn Ile Ser Arg Ser Ser Ser Thr Tyr Ile Gly Lys Leu Lys
          180          185          190
Ser Asn Phe Leu Gly Thr Lys Phe Ile Val Tyr Asp Thr Ala Pro Ala
          195          200          205
Tyr Asn Ser Ser Gln Ile Leu Ser Pro Pro Asn Arg Ser Arg Ser Phe
          210          215          220
Asn Ser Lys Lys Val Ser Pro Lys Val Pro Ser Gly Ser Tyr Asn Ile
225          230          235          240
Ala Gln Val Thr Tyr Glu Leu Asn Leu Leu Gly Thr Arg Gly Pro Arg
          245          250          255
Arg Met Asn Cys Ile Met His Ser Ile Pro Ser Leu Ala Leu Glu Pro
          260          265          270
Gly Gly Thr Val Pro Ser Gln Pro Glu Phe Leu Gln Arg Ser Leu Asp

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	275		280		285										
Glu	Ser	Phe	Arg	Ser	Ile	Gly	Ser	Ser	Lys	Ile	Val	Asn	His	Ser	Gly
	290					295					300				
Asp	Phe	Thr	Arg	Pro	Lys	Glu	Glu	Glu	Gly	Lys	Val	Arg	Pro	Leu	Val
305					310					315					320
Leu	Lys	Thr	Lys	Pro	Pro	Arg	Trp	Leu	Gln	Pro	Leu	Arg	Cys	Trp	Cys
				325					330					335	
Leu	Asn	Phe	Lys	Gly	Arg	Val	Thr	Val	Ala	Ser	Val	Lys	Asn	Phe	Gln
		340						345					350		
Leu	Met	Ser	Ala	Ala	Thr	Val	Gln	Pro	Gly	Ser	Gly	Ser	Asp	Gly	Gly
	355						360					365			
Ala	Leu	Ala	Thr	Arg	Pro	Ser	Leu	Ser	Pro	Gln	Gln	Pro	Glu	Gln	Ser
	370					375					380				
Asn	His	Asp	Lys	Ile	Ile	Leu	His	Phe	Gly	Lys	Val	Gly	Lys	Asp	Met
385				390						395					400
Phe	Thr	Met	Asp	Tyr	Arg	Tyr	Pro	Leu	Ser	Ala	Phe	Gln	Ala	Phe	Ala
			405						410					415	
Ile	Ser	Leu	Ser	Thr	Phe	Asp	Thr	Lys	Leu	Ala	Cys	Glu			
		420						425							

&lt;210&gt; 6

&lt;211&gt; 388

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 6

Met	Ser	Leu	Lys	Asn	Ile	Val	Lys	Asn	Lys	Tyr	Lys	Ala	Ile	Gly	Arg
1				5					10					15	
Arg	Gly	Arg	Ser	His	Ile	Ala	Pro	Glu	Gly	Ser	Ser	Val	Ser	Ser	Ser
			20					25					30		
Leu	Ser	Thr	Asn	Glu	Gly	Leu	Asn	Gln	Ser	Ile	Trp	Val	Asp	Leu	Pro
		35					40					45			
Pro	Glu	Leu	Leu	Leu	Asp	Ile	Gln	Arg	Ile	Glu	Ser	Glu	Gln	Ser	
	50					55				60					
Leu	Trp	Pro	Gly	Arg	Arg	Asp	Val	Val	Ala	Cys	Ala	Ser	Val	Cys	Lys
65				70					75					80	
Ser	Trp	Arg	Glu	Met	Thr	Lys	Glu	Val	Val	Lys	Val	Pro	Glu	Leu	Ser
				85					90					95	
Gly	Leu	Ile	Thr	Phe	Pro	Ile	Ser	Leu	Arg	Gln	Pro	Gly	Pro	Arg	Asp
			100					105					110		
Ala	Pro	Ile	Gln	Cys	Phe	Ile	Lys	Arg	Glu	Arg	Ala	Thr	Gly	Ile	Tyr
		115					120					125			
Arg	Leu	Tyr	Leu	Gly	Leu	Ser	Pro	Ala	Leu	Ser	Gly	Asp	Lys	Ser	Lys
	130					135					140				
Leu	Leu	Leu	Ser	Ala	Lys	Arg	Val	Arg	Arg	Ala	Thr	Gly	Ala	Glu	Phe
145					150					155				160	
Val	Val	Ser	Leu	Ser	Gly	Asn	Asp	Phe	Ser	Arg	Ser	Ser	Ser	Asn	Tyr
				165					170					175	
Ile	Gly	Lys	Leu	Arg	Ser	Asn	Phe	Leu	Gly	Thr	Lys	Phe	Thr	Val	Tyr
			180					185					190		
Glu	Asn	Gln	Pro	Pro	Pro	Phe	Asn	Arg	Lys	Leu	Pro	Pro	Ser	Met	Gln
		195					200					205			
Val	Ser	Pro	Trp	Val	Ser	Ser	Ser	Ser	Ser	Ser	Tyr	Asn	Ile	Ala	Ser
	210					215					220				
Ile	Leu	Tyr	Glu	Leu	Asn	Val	Leu	Arg	Thr	Arg	Gly	Pro	Arg	Arg	Met
225					230					235				240	
Gln	Cys	Ile	Met	His	Ser	Ile	Pro	Ile	Ser	Ala	Ile	Gln	Glu	Gly	Gly

245 250 255  
 Lys Ile Gln Ser Pro Thr Glu Phe Thr Asn Gln Gly Lys Lys Lys Lys  
 260 265 270  
 Lys Pro Leu Met Asp Phe Cys Ser Gly Asn Leu Gly Gly Glu Ser Val  
 275 280 285  
 Ile Lys Glu Pro Leu Ile Leu Lys Asn Lys Ser Pro Arg Trp His Glu  
 290 295 300  
 Gln Leu Gln Cys Trp Cys Leu Asn Phe Lys Gly Arg Val Thr Val Ala  
 305 310 315 320  
 Ser Val Lys Asn Phe Gln Leu Val Ala Ala Ala Glu Ala Gly Lys  
 325 330 335  
 Asn Met Asn Ile Pro Glu Glu Glu Gln Asp Arg Val Ile Leu Gln Phe  
 340 345 350  
 Gly Lys Ile Gly Lys Asp Ile Phe Thr Met Asp Tyr Arg Tyr Pro Ile  
 355 360 365  
 Ser Ala Phe Gln Ala Phe Ala Ile Cys Leu Ser Ser Phe Asp Thr Lys  
 370 375 380  
 Pro Val Cys Glu  
 385

<210> 7

<211> 379

<212> PRT

<213> Arabidopsis sp.

<400> 7

Met Pro Leu Ser Arg Ser Leu Leu Ser Arg Arg Ile Ser Asn Ser Phe  
 1 5 10 15  
 Arg Phe His Gln Gly Glu Thr Thr Thr Ala Pro Glu Ser Glu Ser Ile  
 20 25 30  
 Pro Pro Pro Ser Asn Met Ala Gly Ser Ser Ser Trp Ser Ala Met Leu  
 35 40 45  
 Pro Glu Leu Leu Gly Glu Ile Ile Arg Arg Val Glu Glu Thr Glu Asp  
 50 55 60  
 Arg Trp Pro Gln Arg Arg Asp Val Val Thr Cys Ala Cys Val Ser Lys  
 65 70 75 80  
 Lys Trp Arg Glu Ile Thr His Asp Phe Ala Arg Ser Ser Leu Asn Ser  
 85 90 95  
 Gly Lys Ile Thr Phe Pro Ser Cys Leu Lys Leu Pro Gly Pro Arg Asp  
 100 105 110  
 Phe Ser Asn Gln Cys Leu Ile Lys Arg Asn Lys Lys Thr Ser Thr Phe  
 115 120 125  
 Tyr Leu Tyr Leu Ala Leu Thr Pro Ser Phe Thr Asp Lys Gly Lys Phe  
 130 135 140  
 Leu Leu Ala Ala Arg Arg Phe Arg Thr Gly Ala Tyr Thr Glu Tyr Ile  
 145 150 155 160  
 Ile Ser Leu Asp Ala Asp Asp Phe Ser Gln Gly Ser Asn Ala Tyr Val  
 165 170 175  
 Gly Lys Leu Arg Ser Asp Phe Leu Gly Thr Asn Phe Thr Val Tyr Asp  
 180 185 190  
 Ser Gln Pro Pro His Asn Gly Ala Lys Pro Ser Asn Gly Lys Ala Ser  
 195 200 205  
 Arg Arg Phe Ala Ser Lys Gln Ile Ser Pro Gln Val Pro Ala Gly Asn  
 210 215 220  
 Phe Glu Val Gly His Val Ser Tyr Lys Phe Asn Leu Leu Lys Ser Arg  
 225 230 235 240  
 Gly Pro Arg Arg Met Val Ser Thr Leu Arg Cys Pro Ser Pro Ser Pro

				245					250					255		
Ser	Ser	Ser	Ser	Ala	Gly	Leu	Ser	Ser	Asp	Gln	Lys	Pro	Cys	Asp	Val	
			260					265					270			
Thr	Lys	Ile	Met	Lys	Lys	Pro	Asn	Lys	Asp	Gly	Ser	Ser	Leu	Thr	Ile	
		275					280					285				
Leu	Lys	Asn	Lys	Ala	Pro	Arg	Trp	His	Glu	His	Leu	Gln	Cys	Trp	Cys	
	290					295					300					
Leu	Asn	Phe	His	Gly	Arg	Val	Thr	Val	Ala	Ser	Val	Lys	Asn	Phe	Gln	
305					310					315					320	
Leu	Val	Ala	Thr	Val	Asp	Gln	Ser	Gln	Pro	Ser	Gly	Lys	Gly	Asp	Glu	
				325					330					335		
Glu	Thr	Val	Leu	Leu	Gln	Phe	Gly	Lys	Val	Gly	Asp	Asp	Thr	Phe	Thr	
			340					345					350			
Met	Asp	Tyr	Arg	Gln	Pro	Leu	Ser	Ala	Phe	Gln	Ala	Phe	Ala	Ile	Cys	
		355					360					365				
Leu	Thr	Ser	Phe	Gly	Thr	Lys	Leu	Ala	Cys	Glu						
	370					375										

&lt;210&gt; 8

&lt;211&gt; 397

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 8

Met	Ala	Gly	Ser	Arg	Lys	Val	Asn	Asp	Leu	Leu	Glu	Glu	Asn	Lys	Gly	
1				5					10					15		
Asn	Val	Asp	Thr	Ile	Thr	Gly	Ser	Leu	Ser	Thr	Gln	Lys	Gly	Glu	Asp	
		20					25						30			
Lys	Glu	Asn	Val	Ser	Pro	Glu	Lys	Val	Ser	Thr	Ser	Val	Glu	Thr	Arg	
		35					40					45				
Lys	Leu	Asp	Arg	Ala	Leu	Lys	Ser	Gln	Ser	Met	Lys	Gly	Asn	Ser	Gly	
	50					55					60					
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&lt;211&gt; 380

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 9

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&lt;211&gt; 445

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 10

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<212> PRT
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&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 14

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&lt;211&gt; 795

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 15

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&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 16

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&lt;211&gt; 1164

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 17

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&lt;211&gt; 1137

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 18

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&lt;211&gt; 1191

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 19

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&lt;210&gt; 20

&lt;211&gt; 1140

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 20

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&lt;211&gt; 1335

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 21

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&lt;212&gt; DNA

&lt;213&gt; Arabidopsis sp.

&lt;400&gt; 22

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&lt;223&gt; Primer

&lt;400&gt; 23

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&lt;220&gt;

&lt;223&gt; Primer

&lt;400&gt; 24

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